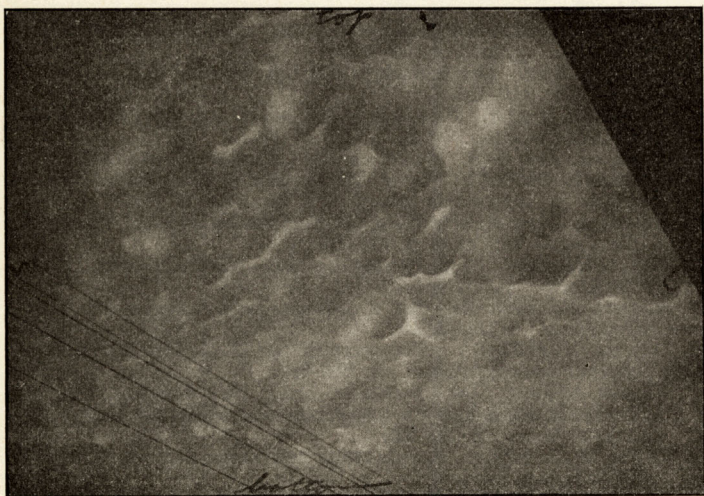


rushes, or cataracts, of cold air, the general process conceivably being as follows:

1. A violent up rush, under cyclonic conditions, of the lower atmosphere, and consequent projection, by virtue of acquired momentum, to elevations beyond the equilibrium level, where it is dynamically cooled to temperatures below that of the surrounding air.

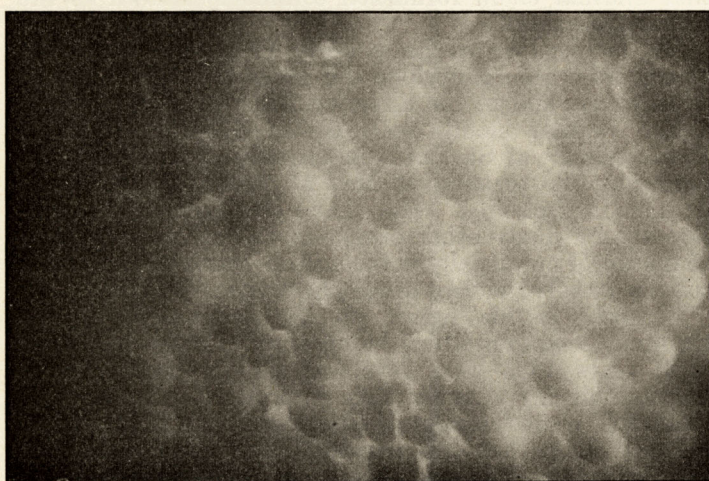
2. A rapid horizontal spreading, under the influence of the cyclonic whirl, of the overlying cooled atmosphere



at a considerable elevation, and therefore often above a stratus cloud of some type.

3. A descent in numerous places of the abnormally cold and consequently unstable air upon and through the underlying cloud stratum; thereby in each such place forcing the cloud below its wonted level and at the same time, through counter convection, raising its intermediate portions above their former position, and thus accentuating the whole phenomenon of pendulous formation.

The actual process, whether in general as above suggested, or some other not so obvious, seems to require



an existing cloud to render it visible, and to be such as to convert a stratus of whatever type into a group of festooned, pendulous, pocket or mammato-cumulus clouds, as run some of its numerous names.

Apparently this type of cloud has very rarely been photographed, and therefore it is earnestly hoped that Mr. Twyford and many others may secure additional records

for the further study of this interesting, unusual, and because of its frequent close relation to tornadoes, perhaps even ominous phenomenon.

UNUSUAL HAILSTONE FORMATION.

The following is extracted from a letter to the Weather Bureau from Mr. D. J. Lingle, Rapid City, Mich.:

Possibly the inclosed sketches (samples) of 3 hailstones that fell here June 15, 1912, may be of interest to you. They are natural size, and the peculiar structure will possibly explain their formation and throw light on hail-forming conditions. The stones were laid on paper and outlined as accurately as I could do it.

The drawings are reproduced herewith and are believed to represent very unusual formations.

